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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/675,723	09/30/2003	Yehia El-Ibiary	03RE019	6359

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EXAMINER	
IP, SHIK LUEN PAUL	
ART UNIT	**PAPER NUMBER**
2837	

DATE MAILED: 07/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/675,723	EL-IBIARY, YEHIA	
	Examiner	Art Unit	
	Paul Ip	2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 June 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-44 and 46-67* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-44,46 and 47* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *9/30/03* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Related Applications

1. The specification and the oath/declaration of this or the other application(s) fails to disclose the copending applications 10/201,007 and 10/201,073 as required in 37 CFR § 1.56. Correction is required in the next response.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on July 1, 2004 in Compliances with the provision of 37 CFR § 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1-44 and 46-67 are provisionally rejected under the judicially created doctrine of double patenting over claims 1-37 of Application No. 10/201,007. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

5. Claims 1-44 and 46-67 are rejected under the judicially created doctrine of double patenting over claims 1-35 of U. S. Patent No. 6,862,538 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows:

Independent claim 1 in the present application recites:

> A system for estimating parameters of a motor, the system comprising:
>
> an electronic device that is operable to establish estimated values of a plurality of electrical parameters of an electric motor based on electrical input data obtained at a single load point of the electric motor.

Independent claim 1 of the '538 patent recites:

> An electric motor system, comprising:
>
> an electronic device that is operable to establish estimated values of a plurality of electrical parameters of a motor based on electrical input data and stator resistance data.

Independent claim 1 of the '007 application recites:

> An information system for an electric motor having a stator and a rotor, comprising:
>
> a processing module that is operable to calculate an estimated value of a motor parameter that is variable during motor operating using motor electrical input data, rotor and stator electrical characteristic data, and rotor speed data.

Claim 1 of the present application recites a generic claim covering the same subject matters as recited in claim 1 of the '538 application and claim 1 of the '007 application limitations. Claims 1 of '538 and '007 applications are more specific claims for the "input data" and the application for the "information system". Although the claim language is not identical, it carries the same meaning of interpretation for the recited limitations as recited in the claims.

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application. See MPEP § 804.

Previous Allowable Subject Matter

6. Previous allowed Claims 32-40 and 50-54, and previous objected claims 41-44 and 46-49 are withdrawn from the allowable subject matter for the following rejection.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000.

Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

8. Claims 1-5, 8-12, 15-31, and 58-67 are rejected under 35 U.S.C. 102(e) as being anticipated by Mir et al (6,549,871).

With respect to claims 1-5, 8-12, 15-31, and 58-67, the claims recite the operating parameters of the motor torque, temperature, and efficiency. The patent to Mir et al discloses a method and system for estimating operating parameters of the motor based upon at least one of the torque value, the position value, the speed value, and the temperature value. See the abstract. The at least one of the value is obtained at a single load point of the electric motor and calculating an estimate of the current for a plurality of electrical parameters met the limitation as required in the claims.

9. Claims 1-2, 4-17, 19-31, 39-46, and 48-64 are rejected under 35 U.S.C. 102(b) as being anticipated by Kliman et al (6,042,265) (see 10/201,007 office action mailed on 04/15/05).

The claim language is not the identical to application number 10/201,007. However, the claims cover the same limitations. Kliman et al discloses a method and system for estimating a value of a rotor resistance based on motor electrical input data comprising at least one of input voltage, input current, input frequency, power factor, and input power; based on motor electrical input data comprising input voltage amplitude and power source frequency data (e.g., col. 1 lines 40-53); based on rotor and stator electrical characteristics data comprising stator resistance, stator inductance, rotor inductance, core loss resistance, and magnetizing inductance; and based on rotor speed data; and estimating a value of rotor temperature based on the estimated value of rotor resistance (e.g., col. 3 lines 20-37); comprising a visual display operable to provide a visual indication of the estimated value of the variable motor parameter, such as rotor temperature (e.g., col. 4 lines 11-18); and means to accept input data into the system (e.g., col. 1 lines 34-39).

10. Claims 32-37, 39, and 40 rejected under 35 U.S.C. 102(b) as being anticipated by Dowling et al (6,144,924) (see 10/201,007 Office action mailed on 04/15/05).

Dowling et al discloses a system for estimating an operating parameter of an electric motor having a rotor and a stator comprising: means for providing rotor speed data to an electronic system; means for providing motor input to the electronic system; and means for operating the electronic system to establish an estimated value of motor efficiency based on the rotor speed and the motor input data, wherein the motor input data includes a power source frequency; further comprising means for providing motor characteristic data to the electronic system; wherein the means for operating the electronic system comprises means for operating the electronic system to establish the estimated value of a rotor parameter based on the rotor speed, the motor input data, and the motor characteristic data (e.g., col. 2 lines 10-61, col. 16 lines 37-56, col. 20 lines 55-61, col. 24 lines 31-67, col. 25 line 64 to col. 26 line 5). A careful consideration is given that the means for obtaining electrical parameters and the means for estimating at least one operating parameter are the same as the means recited in claim 32. Although the claim language is not identical, the claim language carries the same meaning for the same referring limitations.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

13. Claims 6, 7, and 55-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mir et al (6,549,871) in view of Giuseppe (6,281,659).

With respect to claims 6, 7, and 55-57, the claims further recite the plurality of electrical parameters comprising rotor resistance and stator resistance. However, the patent to Giuseppe discloses a motor parameter estimation method comprising a rotor and stator resistances estimator 200 for estimating the rotor and stator resistances. Since Mir et al determine current estimate 200, and the determination of the current is in relationship with the rotor and stator resistances, it would have been obvious to one of ordinary skill in the art to provide Mir et al with the rotor and stator resistances estimator for determining the current parameter of the motor as taught or suggested by Giuseppe.

14. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mir et al in view of Discenzo (6,295,510).

Claims 13 and 14 further recite a network communication for the motor apparatus. However, the patent to Discenzo discloses a modular machinery data collection and analysis system comprising a network communication system. Since Mir et al's current estimation system is used in a vehicle control system which is part of the vehicle network communication system, it would have been obvious to one of ordinary skill in the art to use Mir et al's system in a network communication system for monitoring the parameters of the motor as taught or suggested by Discenzo for the same operation environment.

15. Claims 3, 18, 38, 47, and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kliman et al in view of El-Sharkawi, Fundamentals of Electronic Drives. (see application number 10/201,007 Office action mailed on 4/15/05)

Kliman et al does not explicitly discloses establishing an estimated value of electric current through the rotor during operation of the motor based on the previously established estimated value of rotor resistance. However, given a rotor resistance, there are well-established equations that have been known in the art for many decades

that would allow one to easily calculate the rotor current. For example, El-Sharkawi teaches an equation for calculating a rotor current Tr based in part on a rotor resistance R_2 (e.g., page 132 equation 5.45). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kliman et al with El-Sharkawi in order to establish an estimated value of rotor current during without having to use an invasive measuring device. Kliman et al teaches that it is usually impractical or difficult to get at the motor interior to measure rotor temperature with the use of larg probes. Thus, using this same teaching and rational one would have been motivated to modify Kliman et al with El-Sharkawi in order to avoid using invasive current probes to measure the rotor current. Kliman et al does not explicitly disclose establishing an estimated value of motor torque during operation of the motor based on the previously established estimated value of rotor resistance. However, given a rotor resistance, there are well-established equations that have been known in the art for many decades that would allow one to easily calculate the motor torque. For example, El-Sharkawi teaches an equation for calculating a motor torque T_d based in part on a rotor resistance R_2 (e.g., pg. 138 equation 5.56). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kliman et al with El-Sharkawi in this manner for similar reasons as disclosed above with respect to the rotor current calculation, namely to avoid the use of a torque sensor.

Response to Amendment

16. Applicant's arguments with respect to claims 1-31, and 55-67 have been considered but the arguments are not persuasive according to the rejections as set forth in the previous paragraphs.

The previous allowable claims 32-40 and 50-54, and the previous objected claims 41-44 and 46-49 are withdrawn from the allowance. A careful reconsideration of these claims are not patentable for the reason as set forth in the co-pending application number 10/201,007, the Office action mailed on 4/15/05. Although the claim language is not identical, the claims carry the same meaning as recited in the co-pending application number 10/201,007.

Applicant's argument for the citation of 37 CFR § 1.56 is not persuasive. It is the applicant's duty to disclose application number 10/201,007 and 10/201,073 (now patent number 6,862,538), either in the specification of the invention, or the application numbers should be recited on an Information Disclosure Statement, PTO-form 1449. Especially, these co-pending applications carry the claims with the same meaning referring to the same limitations. The claims of these co-pending applications are not patentable distinct from each other.

Applicant further argues that applicant does not necessary agree with the Examiner's assertion of the obviousness-type double patenting. Applicant's argument has been carefully considered. However, a careful comparison of the claim language do not show the claims patentable distinct from each other. The claims recited in the double patenting are not identical but the claims carry the same meaning and limitations.

Applicant reminds the Examiner that anticipation under Section 102 can be found only if a single reference shows exactly what is claimed. Applicant's argument is not supported by the claims. Claim 1 recites an electronic device that is operable to establish estimated values of a plurality of electrical parameters of an electric motor based on electrical input data obtained at a single load point of the electric motor. With or without any prior art, anyone of ordinary skill in the art knows that every motor has its operating plurality of electrical parameters based on electrical input data obtained at a

single load point of the electric motor. For an example, a motor for driving a load at certain rpm or speed, the plurality of electrical parameters are the current, voltage, torque, and temperature at the load point of the rpm or speed. When an operator operates a drill motor at 1200 rpm, the input data is the trigger speed load point at 1200 rpm, and the plurality of electrical parameters at the load point are current, voltage, torque, and temperature. Bare in mind of these examples, the claims do not recite any patentable subject matter. Any motor control patents such as Mir et al teach the limitations as recited in the claims. Applicant respectfully notes that torque, temperature, position, and velocity cannot be reasonably considered to be electrical data. Applicant's argument is not supported by the claims. The claims do not define any structure or limitation for determining the recited electrical data. Furthermore, the torque, temperature, and speed can be measured by the current of the motor as electrical data. Applicant's argument is not persuasive.

Applicant further argues that Mir et al reference clearly fails to disclose each element of independent claims 1, 25, and 58. Applicant's argument is not persuasive and the recited claim language fails to support applicant's argument. When Mir et al operates the motor with the input current, the motor established estimated values of a plurality of electrical parameters based on the electrical input data. Any one has ordinary skill in the art can find the electrical parameter from the specification of the motor from the manufacture manual. Operating the motor at any particular load point or speed would produce the parameters such as torque, current, temperature, and voltage. The Examiner does not see any support for the applicant's argument in any claims of the invention.

With respect to applicant's argument for the omitted features of independent claims 15 and 61, see the paragraphs above for applicant's argument. Since the claims do not recite any features to support applicant's argument, there is nothing omitted from the Mir et al reference.

Applicant further argues that the burden of establishing a prima facie case of obviousness falls on the examiner with a citation of few court cases. Applicant's argument is not persuasive. The obviousness is being established to one of ordinary

skill in the art to understand the foundermental theory of the motor structure. Any one of ordinary skill in the art would realize that the rotor resistance and the stator resistance constitutes the design of the motor with the operational current in order to design the motor with the specific function. Any one with ordinary skill in the art would be appreciated to provide Mir et al with the motor parameter consideration as taught or suggested by Giuseppe or Discenzo. Furthermore, applicant's argument is not supported by the claims of the invention. A careful consideration of the claims of the invention, the claims fail to define any structure to support applicant's argument. The input data and the plurality of electrical parameters recited in the claims are not new in the motor control.

With respect to claims 6, 7, 13, 14, and 55, see the previous paragraphs.

Applicant's arguments have been carefully considered. The claims fail to provide any support for the applicant's arguments. It appears that the claims missed the point of invention of this application. Applicant should rewrite the claims in view of figures 4, 6, 7, and 8 of the invention in terms of a method or process for determining the electrical parameters of the motor.

Citation of Pertinent References

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The patents or publications to Kliman et al (6,042,265), Shafer et al (2003/0076065), Kleinau et al (2003/0076064 or 2003/0076061 or 2003/0071594), Dowling et al (6,144,924), Canada et al (6,297,742), Seibel (6,690,139), Royak et al (6,636,012), Grimm et al (6,369,012), and Archer (6,356,044) disclose motor parameters and motor resistance control systems.

Communication Information

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Ip whose telephone number is (571)-272-1941.

The examiner can normally be reached on Monday to Friday from 6:30 am to 3:00 pm Eastern time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin, can be reached on (571)-272-2107. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Paul Ip
Primary Examiner
Art Unit 2837